

TK 426/1

3 Axis machining centres



TK 426/1

3-axis CNC vertical machining centre.

Even if this model is purchased and used also by large multinational corporations, the flexible handling system of the TK 426/1 makes it particularly suitable for small manufacturing enterprises that often need to perform several tooling-ups due to frequent production changes.

Thanks to its excellent price/quality ratio, the TK 426/1 model represents a good starting point for those who wish to abandon their old machines with manual commands and to approach to industrial automation systems and to numeric-control machining centres.

This machining centre is designed for drilling and conventional milling processes and also for copy-milling operations on aluminum extruded profiles and other materials, including steel profiles up to 3 mm thick, steel reinforced PVC, and various other plastics or wood.





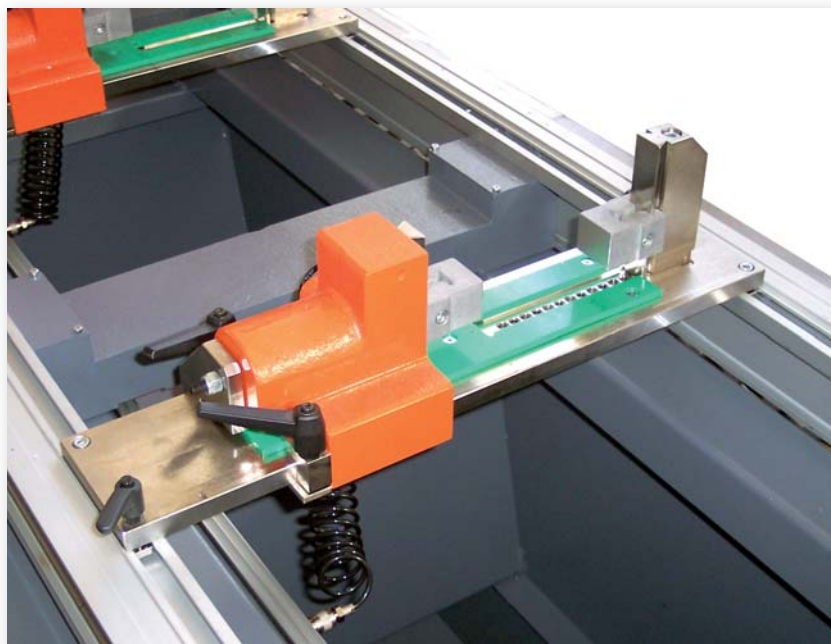
Features

- Electrically welded steel bed frame with hardened and ground slideways and precision rack for X axis.
- Overhead crane in aluminum casting that is composed of two lateral supporting elements and a top crosspiece. On this crosspiece linear slideways and the ball screws with recirculating balls are mounted for Y and Z axis.
- External protection made of steel tubulars and complete with photoelectric cells preventing anyone to step into dangerous zones when the machine is operating.
- Electric-spindle which is equipped with an automatic tool change system with an electric cooling fan.



■ **Linear slideways with recirculating balls**

Thanks to these slide-ways, machine's components can smoothly slide along the machining axis. The ability to withstand mechanical stress while simultaneously maintaining a low coefficient of friction and a high sliding capacity enables these linear slide-ways to improve the performance of the machining centre.



■ Flat clamps

Pneumatic clamping system for the clamping of traditional profiles. The longitudinal and transversal positioning is achieved through manual adjustments.



■ **Fixed tool magazine**

Fixed tool magazine that can hold up to 4 tools. It is possible to insert an additional tool magazine or to provide the machine with different tool magazines that can be used to perform machining processes on profiles whose length is greater than the useful machining length (see optional), according to customer's needs.

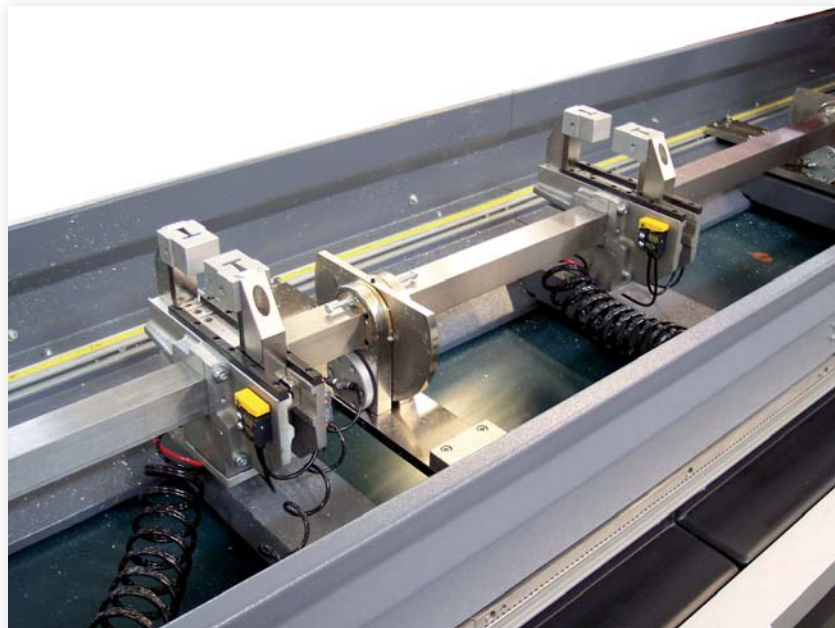
Optional

- Full automatic protection.
- Rotating clamps.
- Additional tool magazine. It reduces by 240 mm the work capacity on axis "X" (4 tools).
- Tool magazine for extra-long profile machining with fixed clamps (max 6 tools).
- Mobile tool magazine for extra-long profile machining with rotating clamps (until 7 m - 8 tools).
- Aggregate heads.
- Micro dropped minimal lubrication.
- Supplementary coolant fluid tank - 30 l capacity.
- Chip drawers.
- Bar code reader.
- Anticollision light system with LED bars.
- Uninterruptible power supply (UPS).



■ Full automatic protection

Complete machine enclosure made up of sound-absorbing panels mounted on the back, lateral and top sides and of a shield with an automatic lowering function in the front side.



■ Rotating clamps

The rotating clamp enables to perform machining processes on 3 sides of the profile and in all angles between -90° and $+90^{\circ}$.

Technical features

Machinability	
Axis X	4000 mm
Axis Y	270 mm max
Axis Z	220 mm max
Max displacement speed	
Axis X	49 m/1'
Axis Y	14 m/1'
Axis Z	14 m/1'
Electric-spindle	
Cone attachment	ISO 30
Max power (S1 service)	5,5 kW
Max torque (S1 service)	7,5 Nm
Max rotation speed	18000 rpm
Cooling system	Electric cooling fan
Tool magazine	
Fixed	4 tools
Additional (optional)	4 tools
For extra-long profile machining with fixed clamps	6 tools max
Mobile tool magazine for extra-long profile machining with rotating clamps	8 tools
Accuracy	
Repetition on linear positioning	+/- 0,1 mm

Software

Over the years Tekna has specialized in developing software solutions and now offers a broad range of products.

To create programs that control the machines, Tekna provides user-friendly software tools that can be used both by professional CNC programmers, who can implement the most complex solutions, and by completely inexperienced users; after a few training hours the customer will be able to operate the machining centre using a graphical programming.

Software solutions offered by Tekna result from an accurate design and from the actual customer needs analysis. The simplicity of usage of these solutions reduces the management time and costs.

All machines come with **antivirus software** preinstalled.

■ CN6 Numerical Control

The Numerical Control basic software controls all functionalities of the machining center through an interface based on windows that includes:

- 👉 The user graphic interface (HMI, Human Machine Interface) displays all variables of the centre, both about programming and user configuration.
- 👉 Project file: simple, intuitive and extraordinary useful function of CN6 which can be used as interface between any management program/software and the machine. In a company it ensures a communication (i.e. a unique language) between the management function and the machine operators.
- 👉 3D machining process: it is possible to import directly the .dxf file of the profile to be machined thus displaying a 3D image of the workpiece completed with the configured machining processes.
- 👉 Clamp positioning: automatic counting managed directly by the program; it can be run in different ways (static or dynamic) depending on the features of the desired machining cycle.
- 👉 The Scheduler function runs in several modes oriented both to a mass production and to a more flexible production in small quantity.
- 👉 Integrated **Formulas Software**: you can use it to define formulas based on the default variables (for example, the profile length) and then use them as macro parameters or within the "If" function.

■ ISO language editor

For numeric-control machines the international programming language ISO is used. With this language you can create programs to perform every kind of machining, with linear or interpolated paths, variable speeds, tapping, parameter use etc. and for managing all functionalities of the machining centre.

■ SLW Self-learning

With the Self-Learning SLW software the customer can easily create machining programs, selecting from a graphic menu a default number of functions (macros). The macro library generated by Tekna includes a large number of machining processes and it is possible to develop functions that increasingly simplify the man-machine interaction so that even an inexperienced user can very easily create several machining programs.

■ NC Tool

The NC Tool is a 2D CAD/CAM software tool that, starting from a CAD drawing, allows the operator to create CN6-compatible machining programs in ISO language by inserting information on the desired machining process.

Any changes to geometrical scales and to the dimensions of an existing drawing are automatically converted in a new updated ISO program.

NC Tool can import/export .dxf and .dwg files, moreover it allows text editing and the subsequent generation of ISO codes.

■ TK Cam

Software package that allows the creation of ISO programs using a 3D graphic programming.

With TK Cam it is possible to assign machining operation regardless of machine models and tool series and view a simulation of the running program in a 3D representation. In TK Cam it is possible to optimize tools and clamps, it provides an anti-collision function and the automatic generation of ISO codes for the program. In the TK Cam it is possible to import specific .dxf/.dwg drawings and to assign the corresponding machining operations. In addition allows the interaction with the management programs commonly used in the window and door frame manufacturing industry.

■ **TK CadX**

TK CadX is a software allowing to import 3D models and to identify the workings that can be carried out by a numeric control machine. By importing files in STEP,TK CadX formats, it independently scans any surface, it analyses them and processes the necessary data for the workings of the pieces; these data are exported in a NCX file (format read by TK Cam) for the automatic generation of ISO working programs of any single machine.

■ **ProfileCam**

ProfileCam is a new Tekna software that provides a 3D graphic environment specifically designed for machining centers. ProfileCam has been designed and developed to better meet the needs of graphic design professionals for the positioning and the structure of simple machining processes and to help to cut costs with an extremely competitive price list.

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